ARCHING MECHANISM AND METHOD OF USE

Cross- References to Related Applications:

6666,511

This application is a continuation of U.S. Serial No. 10/225,821 filed August 21, 2002, which a continuation of U.S. Serial No. 09/738,684 filed December 15, 2000, Patent No. 6,536,840 which is a continuation of U.S. Serial No. 09/382,260, filed August 24, 1999, Patent No. 6,254,187, which is a divisional of 09/110,836, filed July 6, 1998, Patent No. 6,003,941, which is a continuation of 08/778,965, filed January 6, 1997, Patent No. 5,775,773, which is a divisional of 08/488,117, filed June 7, 1995, Patent No. 5,626,390, which is a divisional of 08/352,374, filed December 8, 1994, Patent No. 5,498,063, which is a divisional of 07/820,870, filed August 6, 1990, Patent No. 5,397,164, and claims priority to PCT/AT90/00078 filed August 6, 1990, which claims priority toAT 2133/89 filed September 12, 1989, Patent No. 396734 issued on September 9, 1993 and to AT 1882/89 filed August 4, 1989, abandoned.

The specifications, drawings and all claims of each of these priority applications is hereby incorporated by reference as if fully set forth herein.

Statement Regarding Federally Sponsored Funding:

None.

FIELD OF THE INVENTION

The invention relates to an arching mechanism, particularly for a backrest for a vehicle seat or seats for office and home furniture, respectively seats of all kind, as well as for use particularly in medical or orthopaedic devices and apparatus, such as corsets or arch supports, in scaffoldings or casings, for the production of hulls, etc.

When for instance the arching of a backrest is adjusted, usually the apex of its convexity

31. A lumbar support for the back of a seat, comprising:

a flexible structure having an upper portion and a lower portion, and adapted to bow upon displacement of one of said upper or lower portions toward the other of said upper or lower portions, thereby forming a curvature having an apex,

a traction device to draw at least one of the upper and lower portion toward the other of said upper or lower portion, comprising:

a bowden cable having a wire connected to one of the upper or lower portions of said flexible structure and a guide through which said wire is guided connected substantially at a midpoint of the other of said upper or lower portion of said flexible structure; and

a mechanism connected to said wire for tensioning said wire to draw one of said upper or lower portions toward the other of said upper or lower portions, thereby controllably arching said flexible structure.

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~~31~~. The lumbar support defined in claim 30 wherein said flexible structure further comprises a central section having two vertically extending opposite sides and a plurality of pairs of fingers, with the first finger of each said pair of fingers extending laterally outwardly from one side of said flexible structure and the second finger of each said pair of finger extending laterally outwardly from the opposite side of said flexible structure;

33
~~32~~. The lumbar support according to claim 30, wherein both of said upper and lower portions move when they move toward one another.

34
~~33~~. A lumbar support for the back of a seat, comprising:

a flexible structure having an upper portion and a lower portion, and adapted to bow upon displacement of one of said upper or lower portions toward the other of said upper or lower portions, thereby forming a curvature having an apex,

a traction device to draw at least one of the upper and lower portion toward the other of said upper or lower portion, comprising:

a bowden cable having a wire connected to one of said upper or lower portions of said flexible structure and a guide through which said wire is guided connected at a horizontally lateral position on the other of said upper or lower portion of said flexible structure; and

a mechanism connected to said wire for tensioning said wire to draw one of said upper or lower portions toward the other of said upper or lower portions, thereby controllably arching said flexible structure.

35 ~~34~~. The lumbar support defined in claim 34 ~~33~~ wherein said flexible structure further comprises a central section having two vertically extending opposite sides and a plurality of pairs of fingers, with the first finger of each said pair of fingers extending laterally outwardly from one side of said flexible structure and the second finger of each said pair of finger extending laterally outwardly from the opposite side of said flexible structure;

36 ~~35~~. The lumbar support according to claim 33, wherein both of said upper and lower portions move when they move toward one another.

37 ~~36~~. A lumbar support for the back of a seat, comprising:

a flexible structure having an upper portion and a lower portion, and adapted to bow upon displacement of one of said upper or lower portions toward the other of said upper or lower portions, thereby forming a curvature having an apex,

a traction device to draw at least one of the upper and lower portion toward the other of said upper or lower portion, comprising:

a bowden cable having a wire connected to one of said upper or lower portions of said flexible structure and a guide through which said wire is guided connected at a horizontally intermediate position on the other of said upper or lower portion of said flexible structure; and

a mechanism connected to said wire for tensioning said wire to draw one of said upper or lower portions toward the other of said upper or lower portions, thereby controllably arching said flexible structure.

38 ~~37~~. The lumbar support defined in claim 36 ~~35~~ wherein said flexible structure further comprises a central section having two vertically extending opposite sides and a plurality of pairs of fingers, with the first finger of each said pair of fingers extending laterally outwardly from one side of said flexible structure and the second finger of each said pair of finger extending laterally outwardly from the opposite side of said flexible structure;

39 ~~38~~. The lumbar support according to claim 36 ~~35~~, wherein both of said upper and lower portions move when they move toward one another.